

MODERNIZING THE DEBT OFFSET COLLECTION FILE
TRANSMISSION

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SC DEPARTMENT OF REVENUE

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Problem Statement

The South Carolina Department of Revenue supplies an MS-DOS based application to the participants of the Individual Income Tax Debt Offset Collection program. This application is provided for the purpose of assisting these agencies in formatting their debt offset files in a format that is readable and acceptable by SCDOR standards. However; since this is an MS-DOS based application, it is an outdated technology source that is no longer supported. Some agencies have experienced problems in getting the application to work properly on their computers. Also since this is a product that is no longer supported and is not used by new development, in house staff knowledge is limited for maintaining and trouble shooting problems and answering questions that have been presented by this MS-DOS application. The debt offset files that are provided to SCDOR are used by the department to match against taxpayer refunds. These files contain personal information of the debtors, such as name, social security number, and address along with the amount of their debt obligation. Most of the participants of the Debt Offset program submit and deliver this information to SCDOR on diskettes and CDs by way of Federal Express.

Project Goal

The purpose of my project is to research and provide information on establishing a more efficient, effective, and secured option for the participants of the Debt Offset Collection program to submit and transmit their data files to SCDOR. My goal is to also address the needs and concerns of our external customers. As a

part of the SC Department of Revenue's mission statement it is stated that we will strive to improve the quality of services and products that are provided to our customers. One of the key results of DOR's strategic plan is to "build and maintain strong stakeholder relationships by working with the stakeholder to meet their expectations and to also provide the tools, system and information to effectively meet their needs". The efforts of my research will include conforming and aligning with the department's efforts toward using the technology that we have available to improve our systems and services.

Background and History

The Debt Offset Collection program is a service extended and provided by SCDOR to colleges, hospitals, municipalities, counties, and other state agencies. Each organization submits their initial debt data files to SCDOR annually. The data from these files is used by SCDOR to offset the taxpayer's refund and apply it towards the taxpayer's debt obligation as specified by the participant. SCDOR collects an administrative fee that is applied toward the taxpayer's refund for these services rendered. As part of the Debt Offset program, DOR supplies all requesting organizations with the MS-DOS program application to assist the agencies in entering their debt transactions and formatting their data files. This MS-DOS application was written over 15 years ago as a service extended to the participants of the Debt Offset program. However, since then technology has advanced allowing more secured transmission of data and increased functionalities, features, and options. Also the availability, use, knowledge, and

desire of our customers as it pertains to using modernized technology have increased.

Data Collection Method

I sent out surveys and conducted interviews to gather the information and data that I needed for my research. Surveys were sent to participants of the Debt Offset program for the purpose of gathering the data needed to determine the ability and willingness of the users of this program to comply with any suggested proposals. The survey was also used to gather information on any issues and concerns with the current method that is being used by the agencies to transmit their debt offset transactions to SCDOR. I elected to use a survey as a method to gather information from my external sources because of the number of participants to be contacted. I conducted internal interviews with SCDOR staff members, which included the Debt Offset coordinators, Procurement and Information Resource Management (IRM) staff members. I conducted these interviews for the purpose of determining the best recommendations or solutions to resolve this problem and the feasibility of any proposals.

Appendix #1 Interview Questions

Appendix #2 Survey

Data Collection Results

In the 2009 tax processing year SCDOR collected revenue of \$6,687,150.00 from the debt offset administration fees applied by the Individual Income Tax processing system. The funds collected by SCDOR on the behalf of the external

debt offset participants were \$94,593,814.42. SCDOR has a total of 120 agencies that participate in the Debt Offset program who send their files directly to SCDOR. Approximately sixty of these agencies requested that SCDOR send them a diskette or CD with the MSDOS application written and provided by SCDOR to assist these agencies in formatting their records for their files. The number of debt offset transactions submitted from a single agency ranges from one transaction to over 76,000 transactions. All the agencies that responded to the survey expressed an interest and a desire to be able to submit their transactions electronically. Unlike when this program first began, all of the respondents now have internet capability and Microsoft Windows. Several of the agencies expressed the same concerns and dissatisfaction with the current MS-DOS application, such as not being able to get the report print function or option to work. As a result they cannot easily verify the information that has been keyed, thus causing them errors and rework. Also some expressed security issues of having their CDs and diskettes mailed to SCDOR rather than being transmitted electronically. Others made comments on being able to use email as a means to transmit their data files. One agency expressed dissatisfaction of the current application not being compatible with their windows application.

Appendix #3 Survey Results

Data Collection Analysis

The Debt Offset program is an important source of revenue for The SC Department of Revenue and the counties, schools, hospitals, and other

government agencies, which are the participants of this program. Based on the survey responses received from the debt offset participants it is apparent that the effort to modernize the debt offset submission, which will offer improvements and enhancements to the current program, is much anticipated and desired by SCDOR customers. The request of an agency to receive a copy of the MS-DOS application is specified and requested by the agency on their Debt Offset application form. Modernizing the debt offset file submission process will save time and eliminates the effort of the debt offset coordinators to download the MS-DOS application to diskette or CD for requesting participants. The estimated cost for sending out the requested CDs & diskettes for the 2010 processing year and receiving and delivering the incoming CD and diskettes for the 2010 processing year is estimated to be \$420.00

Proposed Solution

I am proposing that a WEB based application be developed by SCDOR to be used by external agencies as a means to submit their debt offset files to SCDOR. This will resolve the issue of replacing the MS-DOS application and this solution also addresses security concerns. I also explored the option of allowing the entities to submit their files electronically through the use of secured email. I discovered that the email option was previously attempted by another SCDOR system, which resulted in unfavorable results. Using email to transmit data files resulted in incomplete file transactions and obscured data files. As a result this idea was dismissed.

Advantages of using a WEB Application

1. Improve data accuracy
2. Streamline data transportation channels
3. Meet data file security demands
4. Replacing the MS-DOS application eliminates the need for each agency to have a copy of the software application uploaded onto their individual computers.
5. Eliminate some of the manual functions required by SCDOR debt coordinators
6. Reduce the manual interference required by computer operations.
7. Improve customer service by supplying a more improved and user friendly application.
8. Increase efficiency and effectiveness
9. Support customer request to offer a more secured option of transmitting files
10. Improve customer relations
11. Provide enhancements and increased functionalities, such as the ability to electronically acknowledge files received.
12. Offers flexibility to the consumer by making this service available from any computer that can access the internet.
13. A Web-based application can also be utilized by multiple users at the same time.
14. Data can be validated at the time of entry

Software Requirements

Upon consulting with the IRM new development supervisor it has been determined that IRM contains the necessary software products that could be used to develop a WEB based application for the purpose of accepting and receiving files from external agencies for the Debt Offset Collection program. The software options discussed to be used toward building this WEB application were C #, SQL, and .NET. The current SCDOR infrastructure consists of the equipment, systems, software, and services needed to implement this proposal.

Implementation

In order to implement this proposal SCDOR must first have an internal requestor or sponsor to submit a formal request, which will be Central Collections since this area is in charge of the Debt Offset collection program. SCDOR has an online system that is used by supervisors and managers to submit request to the IRM division. This online request must be approved by SCDOR administrators and managers before it is assigned to the IRM staff members. Upon approval the IRM division will be responsible for the design, development, implementation, and maintenance of the web application. It has been estimated that a project of this magnitude will take about six months to design, develop, test, and implement. Since the debt offset files are received from agencies during the months of November and December, the final implementation should occur no later than the month of October. It is my recommendation that the development phase of this project upon approval begins before the month of April, pending legislative

mandates, available resources, and revenue. Based on these findings the earliest implementation date of this project would be 2011 in time for the 2012 tax processing year.

Responsibilities and Assignments

IRM Systems Analyst: Organizes the project assignment. Designs, develops, test, and implements the new application. Also monitors the system results and performance. The analyst also ensures that the user and systems requirements are being captured.

IRM Security Staff: Setup user authorization and accessibility by assigning user ids and passwords to the debt offset clients.

IRM Operation Support: Responsible for activating the jobs that will be used to retrieve the debt offset files from the server.

Debt Coordinators: Revision of the Debt Offset application form to remove the verbiage that allows for the participants to request for a copy of the MS-DOS application. Approves and verifies that the web application captures all information required for the purpose of applying the debt offset. Approves and verifies test results. Add the reference to DOR website and link to debt offset application. Will be responsible for notifying all participates of the new process.

Security / Application Design

Verification of user authentication and user authorization must also be done.

Authentication requires that the user supplies the user id and password.

Authorization defines what the user or customer is allowed to view and do. Verification of the user's id and password are done at the application level. Security is activated on more than one level. SCDOR uses various layers of security to protect data received and sent through its' Web applications. IRM standards are to use the following multi-layered application design, which consists of the User Interface layer, the Business Logic layer, the Data Access layer, and the Database. This design offers an additional level of security in protecting client and taxpayer information. The Users Interface (UI) layer contains screens and user interface components. The UI layer is the only layer that is connected to the user. The Business Logic layer contains the business rules for the application. The Data Access layer reads and writes from the database. This is the only place that the data is accessed. SCDOR uses SSL (Secure Sockets Layer). SSL is an internet security protocol used by internet browsers to transmit sensitive information securely. SSL enables the encryption of data during online transmissions. SSL creates a secure connection between the client and the server.

APPENDIX # 4 DESIGN LAYER

Potential Risks

My first thought was to replace the MS-DOS program with a Microsoft windows based program. However, since the responses to my survey revealed that each of the respondents had internet capability and some expressed concerns with security issues with their files, my suggestion is to develop a WEB based

application. However there is an unlikely, but slight risk that there remains an agency without internet capability. In this case if we are only considering one or two agencies it would not be feasible to develop a window based program. However in terms of addressing any concerns, we can suggest that they encrypt their CD before sending it. This would require that they also supply the password to decrypt the file. Other uncontrolled risks include potential budget cuts and lack of available IRM new development resources. These issues may delay or postpone efforts.

Evaluation Method

As a means to determine and evaluate the effectiveness and efficiency of the implementation of this project, I suggest that a survey or questionnaire be sent to the end users, which will be the participants of the Debt Offset Collection program. A follow-up survey will give the users an opportunity to convey any questions, concerns or complications that they maybe experiencing so that they can be addressed and resolved.

Summary and Recommendation

Based on my research I conclude that Web based application is the most efficient and reliable solution that will best meet the needs and expectations of the customers. A WEB application will offer the participants of the Debt Offset Collection program the ability to have their files formatted in an efficient manner and submitted electronically to SCDOR using a secured environment. Data will be transmitted through SSL and encrypted during transmission. Having a WEB

based application also offers flexibility in being able to enhance or modify the system and files as the user and system needs change. Replacing the MS-DOS application and eliminating the need to send out diskettes and CDs to the customers to assist them in formatting their data files will in turn also eliminate the need for SCDOR to receive diskettes and CDs from these agencies. The implementation of this proposal resolves the security concerns of our external customers. This also presents the opportunity to offer enhancements and improvements, such as removing the address of the debtor that is sent by the participants, as it is neither stored nor used by the Individual Income Tax processing system.

APPENDIX #1

INTERVIEW QUESTIONS

Debt Offset Coordinator	<ul style="list-style-type: none"> • Explain the debt offset program application process. • How do you determine which agencies should receive the MSDOS application program? • What are some of the problems that you have encountered with the diskettes and CDs received from the participants of the debt offset program? • What are some of the problems and concerns that been relayed to you by the customers of the debt offset program relating to use of the MSDOS application program? • What are your thoughts on replacing the current MSDOS application program with a modernized application?
Information Technology Manager	<ul style="list-style-type: none"> • What are some the issues that should be addressed in replacing this MSDOS application program with a WEB based application?
SR Application Analyst Internet Technical Analyst Supervisor	<ul style="list-style-type: none"> • Does SCDOR have the software needed to develop a Windows based application program? • Does SCDOR have the software and knowledge available to convert the debt offset file submission process to a WEB based application? • What are your thoughts on replacing the current MSDOS application program with a modernized application?
Supervisor Security Administrator	<ul style="list-style-type: none"> • What security issues would be involved in using a WEB based application?
Revenue Operations Supervisor	<ul style="list-style-type: none"> • What risks would be involved in replacing this MSDOS application with a WEB based application? • What are your thoughts about allowing agencies with a small number of debt transactions to email their files to SCDOR?
Procurement Manager	<ul style="list-style-type: none"> • What is the estimated cost for mailing a CD or Diskette?
Revenue Operations Administrator	<ul style="list-style-type: none"> • What is the estimated cost for delivering CD and Diskettes received?

APPENDIX # 2

**State of South Carolina
Department of Revenue
301 Gervais Street, P.O. Box 125, Columbia, South Carolina 29214**

1. Do you have Microsoft Windows? Yes ☐ No ☐
2. Do you have internet access? Yes ☐ No ☐
3. Do you use the 'Offset Debt Collection System' program provided by SCDOR to create and format your debt files? Yes ☐ No ☐
4. How do to transmit your debt files to DOR?
CDROM ☐ Diskette ☐ Other ☐
5. Would you be interested in submitting your debt files electronically?
Yes ☐ No ☐

Recommendations on improving the method by which debt files are formatted and/or transmitted:

Other Comments:

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APPENDIX # 3 SURVERY RESULTS

88% Response Rate

AGENCY NAME	CONTACT	MEDIA TRANSMISSION TYPE
AIKEN CENTER	DEBT COORDINATOR	DISKETTE
AIKEN HOUSING AUTHORITY	DEBT COORDINATOR	CDROM
AIKEN TECHNICAL COLLEGE	DEBT COORDINATOR	CDROM
ANDERSON OCONEE BEHAVIORAL	DEBT COORDINATOR	DISKETTE
B&CB SC RETIREMENT SYSTEMS	DEBT COORDINATOR	DISKETTE
BEHAVIORAL HEALTH SERVICES	DEBT COORDINATOR	DISKETTE
CHARLESTON MEMORIAL HOSPITAL	DEBT COORDINATOR	DISKETTE
CLEMSON UNIV-PERKINS LOANS	DEBT COORDINATOR	CDROM
CLEMSON UNIV-STUDENT ACCOUNT	DEBT COORDINATOR	CDROM
COASTAL CAROLINA UNIVERSITY	DEBT COORDINATOR	CDROM
COLLEGE OF CHARLESTON-STUDEN	DEBT COORDINATOR	CDROM
COLUMBIA HOUSING AUTHORITY	DEBT COORDINATOR	DISKETTE
CONVERSE COLLEGE	DEBT COORDINATOR	CDROM
CORNERSTONE ALCOHOL AND DRUG	DEBT COORDINATOR	DISKETTE
COUNTY OF LEXINGTON	DEBT COORDINATOR	DISKETTE
CRIMINAL JUSTICE ACADEMY	DEBT COORDINATOR	CDROM
FLORENCE-DARLINGTON TECH	DEBT COORDINATOR	CDROM
FLORENCE-DARLINGTON TECH STU	DEBT COORDINATOR	CDROM
FORREST JUNIOR COLLEGE	DEBT COORDINATOR	DISKETTE
FORT MILL HOUSING AUTHORITY	DEBT COORDINATOR	CDROM
FRANCIS MARION UNIVERSITY	DEBT COORDINATOR	CDROM
GREENVILLE COUNTY SCHOOL	DEBT COORDINATOR	CDROM
GREENVILLE TECH COLLEGE	DEBT COORDINATOR	CDROM
HARTSVILLE HOUSING AUTHORITY	DEBT COORDINATOR	DISKETTE
HILTON HEAD #1 PSD	DEBT COORDINATOR	DISKETTE
HORRY-GEORGETOWN TECH COLLEGE	DEBT COORDINATOR	CDROM
HOUSING & REDEV OF MARLBORO	DEBT COORDINATOR	CDROM
HOUSING AUTH CITY OF CHAS	DEBT COORDINATOR	DISKETTE
HOUSING AUTH OF ANDERSON	DEBT COORDINATOR	CDROM
HOUSING AUTH OF FLORENCE	DEBT COORDINATOR	CDROM
HOUSING AUTH OF GREENWOOD	DEBT COORDINATOR	DISKETTE
HOUSING AUTH OF MARION	DEBT COORDINATOR	DISKETTE
HOUSING AUTH OF WOODRUFF	DEBT COORDINATOR	DISKETTE
HOUSING AUTHORITY OF CHERAW	DEBT COORDINATOR	CDROM
HOUSING AUTHORITY OF MCCOLL	DEBT COORDINATOR	CDROM
LANCASTER CTY NATURAL GAS AU	DEBT COORDINATOR	DISKETTE
LANDER UNIVERSITY	DEBT COORDINATOR	CDROM
LIMESTONE COLLEGE	DEBT COORDINATOR	DISKETTE
MEDICAL UNIVERSITY OF SC	DEBT COORDINATOR	CDROM
MULLINS HOUSING AUTHORITY	DEBT COORDINATOR	DISKETTE
N CHARLESTON HOUSING AUTH	DEBT COORDINATOR	CDROM
NORTHEASTERN TECH COLLEGE	DEBT COORDINATOR	CDROM

APPENDIX #4

DESIGN LAYER

